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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,994	06/14/2006	Shigeki Satou	890050.543USPC	6987

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EXAMINER	
NGUYEN, KHANH TUAN	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
09/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,994	SATOU ET AL.	
	Examiner	Art Unit	
	KHANH T. NGUYEN	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/22/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 07/18/2008 is entered and acknowledged by the Examiner. Claims 1-4 are currently pending in the instant application.

Withdrawn Rejection(s)

2. The rejection provisionally rejected of claims 1-4 on the ground of nonstatutory obviousness- type double patenting over claims 1-3 of copending Application No. 10/580,991 is withdrawn in view of Applicant's amendment to the copending Application. The rejection of claims 1 and 3 under 35 U.S.C. 102(b) as being anticipated by Yokoyama et al. (U.S. Pat. 5,242,511) is withdrawn in view of Applicant's remark. The rejection of claims 2 and 4 under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al. (U.S. Pat. 5,242,511) in view of December (U.S. Pub. 2002/0056641 A1) is withdrawn in view of Applicant's remark.

Information Disclosure Statement

3. The information disclosure statement (IDS) filed on 07/22/2008 has been considered. An initialed copy accompanies this Office Action.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 5,601,638 (hereinafter Fukuda) in view of either U.S. Pat. 5,766,392 (hereinafter Nakano) or English Translation of JP Pub. 07-021833 (hereinafter Sasaki).

With respect to instant claim 1, Fukuda teaches a paste comprises of a matrix comprising of acrylic resin dissolve in butyl carbitol acetate, alpha-terpineol or 2-tetradeecanol (Col. 2, lines 44-56). At column 2 lines 8-14, Fukuda teaches said paste can be conductive by adding conductive powder such as nickel, Au, Ag, Ag-Pd or Cu into the said matrix (Col. 3, lines 2-10), a resistor paste can be made by adding electrically resistive powder such as RuO_2 into the said matrix (Col. 2, lines 11-14), a insulating paste can be made by adding insulating powder such as Al_2O_3 into the said matrix (Col. 2, lines 14-16) and a protective paste can be made by adding protective powder such as glass filler, glass/SiO2 or Al_2O_3 into the said matrix (Col. 2, lines 17-19). In other words, the paste of Fukuda comprises an acrylic resin dissolve in butyl carbitol acetate, alpha-terpineol or 2-tetradeecanol with various inorganic powders to give a desire property (i.e. conductive, resistive, insulating or protective).

The difference between the instant applicant and Fukuda disclosure is that Fukuda failed to suggest a solvent selected from a group consisting of limonene, alpha-terpinyl acetate, l-dihydrocarvyl acetate, l-menthone, l-perillyl acetate, l-carvyl acetate and d-dihydrocarvyle acetate.

In an analogous art, Nakano teaches a paste comprising of acrylate polymer (Col. 2, lines 49-52) and geraniol, alpha-terpineol or terpineol acetate solvent (Col. 2, lines 44 and 59). The terpineol acetate solvent of Nakano is readable on the claims alpha-terpineol acetate since a skilled artisan can easy select and use alpha-terpinyl acetate after having read Nakano disclosure because such as an acetate ester solvent is disclosed by the prior art. Nakano further teaches adding metal powder such as Pd, Ag and Pd-Ag powder into the acrylate mixture to form a conductive paste (Col. 2, lines 55-56).

Similarly, Sasaki teaches a paste comprising of acrylic resin [0014] and butyl carbitol acetate, terpineol or hydrogenated terpineol acetate solvent ([0005] and [0009]). The hydrogenated terpineol acetate solvent of Sasaki is readable on the claims alpha-terpineol acetate since a skilled artisan can easy select and use alpha-terpinyl acetate after having read Sasaki disclosure because such as an acetate ester solvent is disclosed by the prior art. Sasaki further teaches adding metal powder such as Pd, Ag, Au, Pt, nickel or alloy mixture of these powders into the acrylic mixture to provide conductivity to the paste [0010].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the paste of Fukuda by first substituting the butyl

carbitol acetate or alpha-terpineol solvent of Fukuda with terpineol acetate solvent of Nakano or hydrogenated terpineol acetate solvent of Sasaki because such substitution is expressly suggested by the prior art. Then substituting the metal powder of either Nakano or Sasaki with a resistive powder such RuO_2 or insulating powder such as Al_2O_3 into the acrylic matrix to form a resistive or insulating paste (dielectric paste) as suggested by Fukuda. The burden is upon the applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 5,601,638 (Fukuda) in view of either U.S. Pat. 5,766,392 (Nakano) or English Translation of JP Pub. 07-021833 (Sasaki) as applied to the above claims, and further in view of U.S. Pat. 5,242,511 (hereinafter Yokoyama).

Fukuda, Nakano and Sasaki are relied upon as set forth above. Fukuda, Nakano and Sasaki did not disclose the acrylic resin having an acid value of equal to or larger than 5 mgKOH/g and equal to or smaller than 25 mgKOH/g.

In an analogous art, Yokoyama teaches conductive paste composition comprising copper alloy including Au, Pd, Ag and Cu (Col. 4, lines 27-38), alpha-terpineol solvent (Col. 7, line 56), and acrylic resin having an acid value of 10 to 80 mg/g, preferably 20 to 75 mg/g, for improving water resistance (Col. 5, lines 30-36). Yokoyama teaches an acrylic resin having an acid value range (10-80 mg/g) that overlaps with the claimed range of 5-25 mg/g.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the paste of Fukuda in view of either Nakano or Sasaki by incorporating an acrylic resin as suggested by Fukuda in view of either Nakano or Sasaki which have an acid value as low as 10 mg/g to provide water resistance as suggested by Yokoyama.

7. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 5,601,638 (Fukuda) in view of either U.S. Pat. 5,766,392 (Nakano) or English Translation of JP Pub. 07-021833 (Sasaki) as applied to the above claims, and further in view of U.S. Pub. 2002/0056641 A1 (hereinafter December).

Fukuda, Nakano and Sasaki are relied upon as set forth above. Fukuda, Nakano and Sasaki did not disclose the acrylic resin having an average molecular weight of equal to or larger 450,000 and equal to or smaller than 900,00 as recite in claim 2 and an acid value of equal to or larger than 5 mgKOH/g and equal to or smaller than 25 mgKOH/g as recited in claim 4.

However, December teaches an acrylic polymer useful in multilayer coating composition having an average molecular weight from about 5,000 to about 5,000,000 [0151] with an acid number from about 1 to about 10 [0142]. December teaches an acrylic resin having and average molecular weight and an acid value range that overlaps with the claimed ranges recited in claims 2 and 4. December also teaches said acrylic polymer may be mixed with ketone, ester, acetate or aromatic hydrocarbon solvent to form the said coating composition [0157].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to formulate paste comprising of an acrylic resin and alpha-terpinyl acetate by modifying paste of Fukuda in view of Nakano or Sasaki by incorporating an acrylic polymer having an average molecular weight in the range of about 5,000 to about 5,000,000 with and acid value of about 1 to about 10 as suggested by December because such a substitution of one similar polymer for another having a similar chemical structure (acrylate polymer) would having yield a predictable result. The court has held similar compounds are generally expected to have similar properties. In re Gvurik, 596 F. 2d 1012,201 USPQ 552. Closely related homologues, analogs and isomers in chemistry may create a prima facie case of obviousness. In re Dillon USPQ 2d 1 897,1904 (Fed. Cir. 1990); In re Payne 203 USPQ 245 (CCPA 1979); In re Mills 126 USPQ 5 13 (CCPA 1960); In re Henze 85 USPQ 261 (CCPA 1950); In re Hass 60 USPQ 544 (CCPA 1944). Thus, one having an ordinary skill in the art would have had a reasonably expectation of success for incorporating a high molecular weight acrylic resin of December into the paste composition of Fukuda in view of Nakano or Sasaki. The Examiner further notes that substitution of equivalents, i.e. acrylic resin having overlapping acid values, requires no express motivation as long as the prior art recognizes the equivalency. Please see. In re Fount USPQ 532 (CCPA 1982); In re Siebentritt, 152 USPQ 618 (CCPA 1967); Graver Tank & Mfg. Co. Inc. v Linde Air Products Co., 85 USPQ 328 (USSC).

8. In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

Response to Arguments

9. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTN
09/11/2008

/DOUGLAS MC GINTY/
Primary Examiner, Art Unit 1796